Temperature/Humidity Data Logger **DR-20** series

Instruction Manual

※Regarding the operation of software and USB Docking station, please refer to DFC-201U Software Operation Manual.

A. Standard Equipment

Unpack and inspect the contents of the container. Please check all the items listed below are included in the carton.

- DR-20 series Data Logger
- Instruction Manual

Please note that, DFC-201U (Optional) is a necessary accessory for DR-20 series to setting the relative functions in PC.

DFC-201U Kit includes the following accessories:

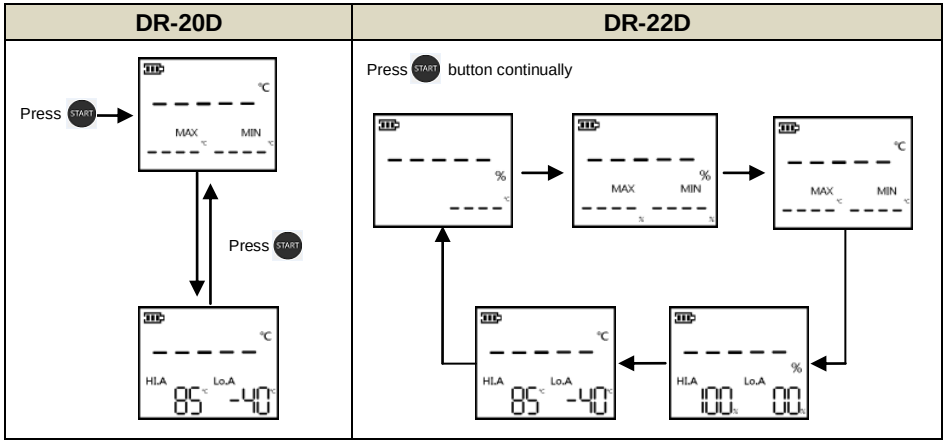
- **DFC-201U** USB Docking station
- **DR-USB-S** USB Flash driver for software
- **DR-USB-W** USB computer interface cable
- **DR-1.05M** Software Ver.1.05 and User's manual

B. Initial status of DR-20D/DR-22D

The brand new DR-20D / DR-22D can't function until user connects it to PC and set the related setting. Please press START button which is in the lower left corner of the data logger to confirm the logger can work well.

※ Press START button one time to observe the LCD content, it will display for 3 seconds.

※ Press START button continually to scroll through the content as the following flowchart.



C. Instrument descriptions

1. Multi-Function LCD Display
2. Start Button
3. Power Indicator (Green LED)
4. Alarm Indicator (Red LED)
5. Breathable Waterproof Membrane
6. Serial No.
7. Connection Endpoint
8. Hang Hole

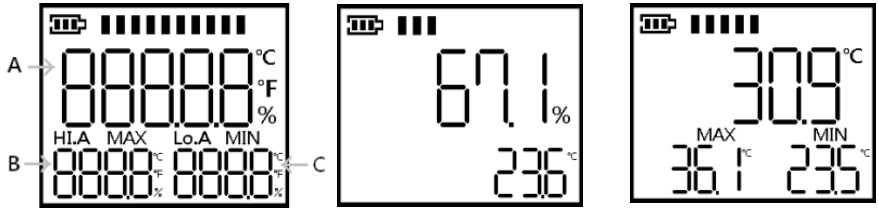
※NOTE :

1. Do not damage or obstruct Breathable waterproof membrane (⑤) to ensure the logger can keep its accuracy!
2. Before using the logger, please remove the Transparent protective sticker which is pasted on the connection endpoint (⑦).

▲Breathable Membrane

▲Protective sticker

D. Display descriptions (DR-20D/22D)



Display	Descriptions
	Battery power indicator
MAX	Maximum value
MIN	Minimum value
Hi.A	High point alarm
Lo.A	Low point alarm
	Memory capacity indicator
A.B.C. Digit zone	Various measuring values display
℃/℉/%	℃: Celsius ; ℉: Fahrenheit ; %: Relative humidity units

※User could turn on/off the LCD display function via software (Please refer to DFC-201U Software Operation Manual)

※Turn off LCD display function will help user with saving battery power. User could press START button to display the measurement value for 3 seconds even you turn off the display function.

E. LED Indicator

1. Power Indicator (Green LED)

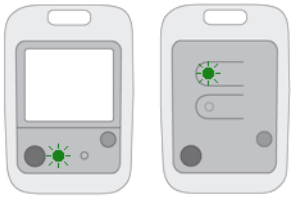
The green LED indicator will blink at 10-second intervals to indicate the logger is in action.

2. Alarm Indicator (Red LED)

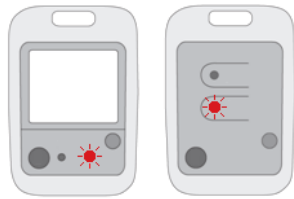
User could set up alarm range in the software, the alarm warning (red LED indicator blink at 10-second intervals) while the alarm range is out of user setting.

※Please STOP the logger via software to shut down the alarm warning.

※Alarm warning will consume a lot of battery power.



▲Green LED Indicator



▲Red LED Indicator

F. Power Shortage Warning:

※The data logger will stop recording while the battery power is less than 10%. Please download the record data immediately.

1. DR-20D/22D:

"Lo-b" and "▭" blink simultaneously.

2. DR-20/22:

Green and Red LED blink simultaneously

▲DR-20D/22D

▲DR-20/22

G. Quick Start Guide:

※Detailed of software applications, please refer to DFC-201U Software Manual.

1. Install software (DFC-201U Ver1.05)

1.1 Connect the USB flash drive to computer.

1.2 Double click ***Setup*** on the USB contents screen to install DFC-201U software.

2. Connect the Data Logger

※Depending on your operating system version and other factors, the PC may not be able to detect the data logger automatically. Please restart the software again.

2.1 Attach the logger to PC via DFC-201U docking station and interface cable. (Please rip off the “Remove before use” sticker)

2.2 Double click ***DFC-201U Ver1.05*** to execute software.

2.3 Click Auto or to connect data logger to PC, it will automatically detect the identity and content of the logger, which including Model no., S/N, Record Location, Number of Records, Sampling rate, Start / End Time.

*Click Auto to connect with logger automatically.

*Select model number & COMPORT and Click to connect with PC.

3. Set the Data Logger

3.1 Click Set on the dialog box to setting the desired start parameters for your application (please make sure the old data is cleared).

3.2 Click Start on the "Data Logger Set" dialog box to start recording.

3.3 Click on the main screen to disconnect the data logger from computer.

4. Download, Clear, Set functions

[Download]: Download record data to software (the data is not saved to PC yet)

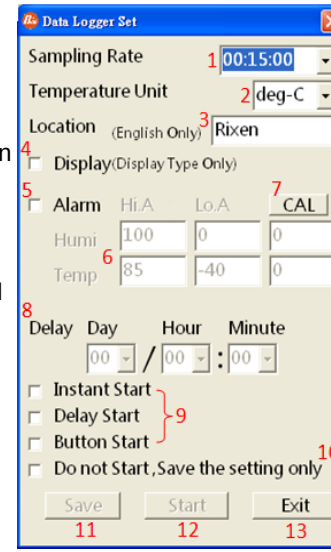
[Clear]: Clear record data, Please do not unplug the logger until clear function finished. The Red LED warning indicator on the data logger will flash quickly when cleaning data.

*To clear data logger's record data: Device→Clear→Device Data

[Set]: Setting the desired start parameters for your application.

*To set start parameters: Device→Set

1. Sampling Rate: 1 second to 24 hours available.
2. Temperature Unit: ℃ or ℉.
3. Location: Register storage location up to 10 letters.
4. Display: Tick the Display function box to display the recording values on LCD.
5. Tick Alarm function box to unlock the Hi.A/Lo.A function
6. Hi.A/Lo.A: Setting Hi.A (high point alarm), and Lo.A (low point alarm).
7. CAL: Click CAL to unlock the REF function.
8. Delay: Tick Delay Start function box and select desired delay start time.
9. Start option: Instant Start/Delay Start/ Button Start
10. Tick this function box and click Save to save settings but not start recording.
11. Save: Save the settings into data logger.
12. Start: Select start method(9) and click Start to start recording.
13. Exit: Click Exit to close *Data Logger Set* dialog box



H. Start & Stop Logging

1. Instant Start

On main screen's toolbar click Device→Set, setting the desired start parameters for your application, tick Instant Start function box, then click Start to start recording.

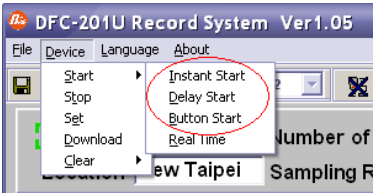
2. Delay start

On main screen's toolbar click Device→Set, tick Delay Start function box to unlock delay start timer and set the length of delay time. The timer can be set up to 99 days, 23 hours and 59 minutes. Press Start to begin the countdown.

3. Button Start

On main screen's toolbar click Device→Set, tick Button Start function box, and then click Start to finish setting. The data logger will in a dormant standby state.

Press START button on the Logger for 3 seconds to start recording (Red & Green LED will light up).



※Before start recording, please check there are no data in the logger and finish setting the desired start parameters.

※While finish setting and start recording, please do not unplug the logger from DFC-201U docking station until the remind message box show up.

※To avoid occurring any accident which is caused by wrong operation, the logger can only be stopped via DFC-201U software. (As described below)

4. Stop Recording

Connect the logger to PC via DFC-201U docking station and USB interface cable.

Press or click Device→ Stop to stop data logging

※When the memory capacity is full or the battery is exhausted, the logger will stop recording.

I. Power Saving

※The logger is built-in long-effectiveness battery. The power life can be maintained for several years under correct operation as the following precautions.

1. Please do not turn on LCD display frequently. The data logger can achieve power economized status when it is not displayed.
2. Based on your need to extend the sampling interval
3. Please do not plug the data logger on docking station when the data logger is not in use.
4. User could press START button to display the measurement value for 3 seconds even you turn off the display function.
5. Alarm warning will consume a lot of battery power, please STOP the logger via software to shut down the alarm warning.
6. Please stop logger and storage it at normal temperature and dry place when the logger is not in use.

J. Operation of LCD display type (DR-20D/22D)

1. Display Mode

   Device→Set, tick Display function box

   The recording values will display in LCD continuously while recording (Display type only). User could press and hold START button for 5 seconds to turn off LCD display. Press START button again to turn on LCD display.

2. None Display mode (Default)

   Device→Set, NOT tick Display function box

   User could press START button to display the measurement value for 3 seconds even turn off the display function.

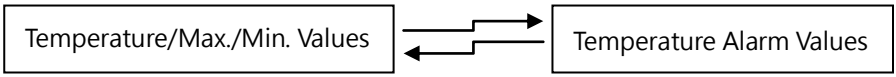
K. Real Time Display

※Real-Time record mode only available when connected data logger to PC.

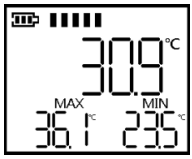
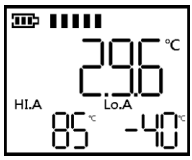
1. The data logger (display type) will update the real-time value on PC synchronous.
2. The data logger (display type) will show up blink ⌐¬└ symbol if user unplugs the logger while processing real-time function. There are three ways to deal with it:
   2.1 Re-plug logger to docking station within 30 seconds to continue real-time function.
   2.2 Press START button within 30 seconds to stop real-time function instantly.
   2.3 The data logger will stop real-time function automatically if user unplug data logger from docking station over 30 seconds,

L. LCD Display Flowchart

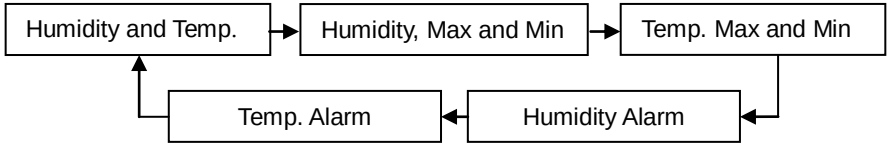
1. DR-20D



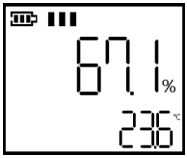
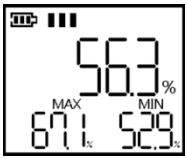
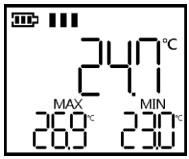
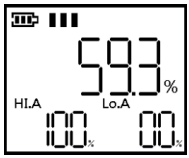
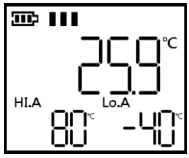
LCD Display of DR-20D described as below

Condition	Display content	LCD Display
Temperature/Max./ Min. value display	Temperature value Maximum Temp. value Minimum Temp. value	
Temperature/Alarm value display	Temperature value Hi.A of Temperature value Lo.A of Temperature value	

2. DR-22D



The LCD Display of DR-22D described as below:

Condition	Display content	LCD Display
Humidity/Temp. value display	Humidity value Temperature value	
Humidity/Max./Min. value display	Humidity value Max. value of Humidity Minimum value of Humidity	
Temp./Max./ Min. value display	Temperature value Maximum value of Temp. Minimum value of Temp.	
Humidity/Alarm value display	Humidity value Hi.A value of Humidity Lo.A value of Humidity	
Temp./Alarm value display	Temperature value Hi.A value of Temperature Lo.A value of Temperature	

M. Troubleshooting

Issue: Data Logger Frozen

Possible Cause:

1. Either unplug data logger from DFC-201U or Unplug USB cable from PC when processing data download or other setting.
2. START button be pressed for a long time
3. Battery power exhausted. The data logger will stop recording automatically when power is less than 10%, but user still could download data.

Solution:

Please contact your local distributor or our service department.

※There is no user serviceable components inside the DR-20 series. Do not attempt to disassemble the data logger. The wrong operating could cause damage. Only a factory qualified person should change and properly dispose of the data logger.

N. Precautions

a. This instrument with waterproof function, please avoid using it in a high temperature environment or with corrosive materials to avoid leakage or damage.
b. When taken out/ put in the logger to a huge temperature varies environment, the difference range will more over than specifications indicate because of the dew on the logger's surface. Please place the logger on well ventilated environment for a while, then it will be restored to normal.
c. In order to connect the Logger with computer, the optional docking station DFC-201U kit is necessary.
d. Do not press or stab to the breathable waterproof membrane which is on front of logger's right side. Please also avoid letting it stain with oil or viscous substance.
e. Do not put the logger in a location of strong electric or electromagnetic wave to avoid the logger's circuit is damaged
f. The connection endpoint (three metal dots) is the main channel to connect with computer, please try to keep it clean
g. Please keep the temperature/Humidity steadied at least 10 minutes to get a more accurate measured value.
h. When the logger is not in use for a long time, please put the logger and its accessories in the protective case, please storage it in a clean and dry environment, and please avoid directly sunlight.
i. Please keep the logger away from children to avoid the occurrence of accidents.
j. The logger has one year warranty. Guarantee will not apply to the damages caused by nature disasters, faulty usages or consumable purposes.
k. If there are any operation questions or malfunction, please contact your local distributor or our service department.

※ Be sure to comply with the required regulations of battery recycling.

DR-20 Series specifications

Model No.	DR-20	DR-20D	DR-22	DR-22D
Measuring Range	Temperature: -40~85℃ (-40~185℉)		Temperature: -40~+85℃ Humidity: 0~100% RH	
Accuracy	± 0.5℃ (± 0.9℉)		± 0.5℃(± 0.9℉)/±3% RH (at 20%~80%RH, Temp. 25°C±5℃)	
Resolution	0.1℃ (0.1℉)		0.1℃ (0.1℉) / 0.1 %RH	
Memory	500,000 readings		250,000 readings per channel	
Display	DR-20/DR-22: 1.Red & Green LED Indicator DR-20D/DR-22D: 1.Red & Green LED Indicator 2.LCD Display (Temperature, Humidity, Max., Min., Hi/Lo Alarm, Memory/Battery capacity icon)			
Sensor	Precision semiconductor sensor			
Sample Rate	1 second to 24 hours			
Battery Life	10 years typical at 25℃, 15 minute sampling rate, and turn off the display/alarm function			
Main Features	Three start modes (Instant start/Button start/Delay start), Real-Time, Red/Green LED indicator, Hi/Low Alarm settings, Build-in S/N, IP 65 Dust & Splash proof,			
Dimensions	80X53X16mm			
Weight	DR-20/22: 54g ; DR-20D/22D: 60g			
Approvals	RoHS; CE; IP65			

※Specifications are subject to change without notice.

Required Accessories

DFC-201U KIT	Including USB Docking station, USB Flash Drive for software & manual, and USB Computer interface cable